

REMARKS

The foregoing amendment amends claim 1 and cancels claim 3. Pending in the application are claims 1, 2, 4 and 5, of which claim 1 is independent. The following comments address all stated grounds for rejection and place the presently pending claims, as identified above, in condition for allowance.

Claim 1 is amended to specify that a liquid sealant is provided on the separators, and that the liquid sealant hardens to provide a seal of a certain degree of elasticity. Claim 1 is also amended to include the subject matter of canceled claim 3, namely, that the seal makes contact with *both* end faces of the first gas diffusion layer and the second gas diffusion layer. *No new matter is added.*

Amendment and/or cancellation of the claims are not to be construed as an acquiescence to any of the objections/rejections set forth in the instant Office Action, and were done solely to expedite prosecution of the application. Applicants reserve the right to pursue the claims as originally filed, or similar claims, in this or one or more subsequent patent applications.

Double Patenting Rejection

Regarding the rejection of claims 1-2 and 5 under the doctrine of obviousness-type double patenting over claims 1-2 of co-pending Patent Application Serial No. 09/847,895, Applicants have amended claim 1 include the subject matter of canceled claim 3, which the Examiner deemed to distinguish over co-pending Patent Application Serial No. 09/847,895. Specifically, the claims of co-pending Patent Application Serial No. 09/847,895, do not teach or suggest that the seal makes contact with *both* end faces of the first gas diffusion layer and the second gas diffusion layer. Therefore, Applicants respectfully request that the provisional rejection of claims 1-2 and 5 under the doctrine of obviousness-type double patenting be reconsidered and withdrawn.

5 U.S.C. 102 Rejections

In the Office Action, the Examiner rejects claims 1-4 under 35 U.S.C. 102(b) as being anticipated by Jones U.S. Patent Number 6,007,933. Applicants respectfully submit that the pending claims 1, 2, and 4, are patentable over the cited references.

The Jones reference describes a fuel cell assembly including one or more fluid flow plates, each having an open-faced flow channel formed therein for providing fluid to a membrane electrode assembly, and a gas diffusion layer located between the flow field plate and the membrane electrode assembly. Gaskets formed of a polytetrafluoroethylene, such as TEFLON®, may be provided to seal holes on the fluid flow plates.

On page 6 of the Office Action, the Examiner indicates that the recitation “a seal, provided onto the separators, which was liquid sealant at the time of application” is interpreted as a solid seal per se. Applicants respectfully disagree. However, in an effort to expedite prosecution of this application, Applicants have also amended claim 1 to recite “a liquid sealant having viscosity provided on the separators, which hardens to provide a seal with a certain degree of elasticity”. It is Applicants’ position that this recitation carries patentable weight, because the recitation is a positive, structural limitation on a component of the fuel cell. This recitation is intended to specify that the fuel cell includes a component formed of a particular material, which is liquid and viscous, and that this component is applied to the separators. The particular material is also capable of hardening to form a seal. When hardened, the material forms a seal having a certain degree of elasticity.

The recitation in amended claim 1 is not directed to a solid seal per se, or the final state of a seal, but rather, a component of the fuel cell that is formed of a material having certain properties. For example, the type of material used to form the seal is a material having the ability to change from a liquid state to a solid state. The material is also viscous in the liquid state. Examples of suitable materials include, but are not limited to, a thermosetting fluorine-containing material or thermosetting silicon, which are not described in Jones.

Regarding the rejection of claim 1 as being anticipated by the Jones reference, Applicants respectfully submit that the Jones reference does not teach or suggest a liquid sealant having a viscosity, which is provided on the separators, as recited in claim 1. Rather, the fuel cell described in Jones includes a *solid* frame gasket, made from a polytetrafluoroethylene material, which is *not* a liquid sealant having a viscosity. The gaskets 304 and 304’ of Jones are *solid* at all times, including during insertion of the gaskets and assembly of the fuel cell. At no point, even during assembly, does the fuel cell of Jones include a liquid sealant having a viscosity, as recited in claim 1.

Furthermore, the Jones reference also does not teach or suggest a component of a fuel cell that is formed of a material that hardens from a liquid state to provide a seal with a certain

degree of elasticity, as also recited in claim 1. Since the gasketing material in Jones is permanently solid, and never in the liquid state, particularly when the gaskets are provided in the fuel cell, Jones does not teach or suggest a component in a fuel cell formed of a material that can *subsequently harden* to provide a seal having a certain degree of elasticity. The gasketing material of Jones is not capable of changing state from a liquid to a solid and vice versa.

Applicants respectfully note that polytetrafluoroethylene material, which is used to form the gaskets of Jones, is not a *thermosetting* fluorine-containing material capable of hardening when heated or cured, as asserted by the Examiner, since the polytetrafluoroethylene material is already solid when it is inserted into the fuel cell. The Jones reference also does not teach or suggest any other material in a fuel cell that may comprise a liquid sealant having a viscosity, which hardens to form a seal.

The JP 08-148169, also cited by the Examiner in the Office Action, does not compensate for the deficiencies of the Jones reference, because the JP '169 reference describes a fuel cell including a permanently solid O-ring gasket 15.

35 U.S.C. 103 Rejections

The Examiner also rejects claim 5 under 35 U.S.C. 103(a) as being unpatentable over the Jones reference in view of Japanese publication JP 08-148169. However, because independent claim 1, from which claim 5 depends, is patentable over the cited references, dependent claim 5 is also patentable over the references.

In summary, because the cited references do not teach or suggest a fuel cell including a component provided on the separators that comprises a liquid sealant having a viscosity, and/or a component of a fuel cell that hardens from a liquid state to provide a seal having a degree of elasticity, claims 1, 2, 4 and 5 are patentable over the cited references. Moreover, because claim 1 specifies that the seal makes contact with *both* end faces of the diffusion layers, the claims are distinct from the claims of co-pending Patent Application Serial No. 09/847,895.

CONCLUSION

For at least the foregoing reasons, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If, however, the Examiner considers that obstacles to allowance of these claims persist, we invite a telephone call to Applicant's representative.

Applicants believe no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. SIW-008 from which the undersigned is authorized to draw.

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Respectfully submitted,

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